



UNITED STATES PATENT AND TRADEMARK OFFICE

cen

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,565	06/26/2003	Nambirajan Seshadri	14169US02	4707
23446 7590 03/21/2007 MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661			EXAMINER BURROWES, LAWRENCE J	
			ART UNIT	PAPER NUMBER
			2616	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/21/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/606,565

Applicant(s)

SESHADRI ET AL.

Examiner

LAWRENCE J. BURROWES

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claims 9, 10, 19, 20, 29 and 30 objected to because of the following informalities:

In claim 9 line 4, the recitation of "a specified threshold" seems to refer to "a specified threshold of claim 1, if this is true, it is suggested applicant change to ---the specified threshold---. Similar problem exists in claims 10, 19, 20, 29 and 30.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11-20 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

For claim 11, the claim falls within a statutory category and includes a judicial exception but has no practical application.

Claims 12-20 are rejected because they depend on claim 11.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-4, 8-14, 18-24 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi et al (6,947,768) hereafter Adachi, in view of Ishikawa et al (5,640,678) hereafter Ishikawa.

For claims 1-4, 8-14, 18-24 and 28-30, Adachi teaches providing a mesh network (see column 35 lines 45-50) using a plurality of access points (see Figure 12, STA21 and STA22), the method comprising: coupling a first access point located in a first cell (see Figure 1, AP1 is located in First BSS) to at least a second access point located in a neighboring second cell (see Figure 1, AP2 is located in Second BSS); providing service initially to at least one of a plurality of access

Art Unit: 2616

devices by the at least a first access point located in the first cell (see Figure 1, STA11);

further comprising coupling the first access point located in a first cell to at least a third access point located in the first cell (see column 4 lines 16-33, since there is a plurality of base stations any of the other base stations can be the third access point);

transmitting a first signal (see Figure 14, S305, AP2 sending request frame to AP1) from a first beamforming antenna (see Figure 17 Box 25, adaptive array antennas are in both access points) coupled to the first access point, to the at least a second access point (see Figure 12, the base stations have a beam that is transmitted between them); and

transmitting a second signal (see Figure 14, S306, AP1 sending request frame to AP2) from a second beamforming antenna (see Figure 17 Box 25, adaptive array antennas are in both access points) coupled to the second access point, to the at least a first access point (see Figure 12, the base stations have a beam that is transmitted between them).

Adachi teaches all of the subject matter of the claimed invention except servicing the at least one of a plurality of access devices by the at least a second access point located in the second cell whenever a signal for the at least one of a plurality of access devices falls below the specified threshold;

servicing the at least one of a plurality of access devices by the at least a third access point located in the first cell whenever a signal for the at least one of a plurality of access devices falls below the specified threshold; and wherein at least one of the first access point and the at least one of a plurality of access devices determines when the signal for the at least one of a plurality of access devices falls below the specified threshold.

Ishikawa from the same or similar fields of endeavor teaches servicing the at least one of a plurality of access devices by the at least a second access point located in the second cell whenever a signal for the at least one of a plurality of access devices falls below a specified threshold (see column 7 lines 1-59); servicing the at least one of a plurality of access devices by the at least a third access point located in the first cell whenever a signal for the at least one of a plurality of access devices falls below the specified threshold (see column 7 lines 1-59, as explained above the third access point can be any base station); and wherein at least one of the first access point and the at least one of a plurality of access devices determines when the signal for the at least one of a plurality of access devices falls below the specified threshold (see column 7 lines 1-59). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify/implement the threshold measuring system of Ishikawa into the wireless communication system of Adachi by connecting the threshold monitoring circuit into the access points and mobile stations. The motivation for doing so would be in order for the access points to process the

Art Unit: 2616

handoff of the mobiles instead of the mobile switching center handling the handoff.

7. Claims 5-7, 15-17 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi, in view of Ishikawa, and further in view of Matthews et al (PGPUB 2002/0077151) hereafter Matthews.

For claims 5-7, 15-17 and 25-27, Adachi, in view of Ishikawa disclose all the limitations of the claimed invention except wherein a path for facilitating the transmitting the first signal between the first beamforming antenna and the second beamforming antenna is an uplink channel; wherein a path for facilitating the transmitting of the second signal between the second beamforming antenna and the first beamforming antenna is a downlink channel; and wherein the uplink and the downlink channel is a backhaul channel.

Matthews from the same or similar fields of endeavor teaches wherein a path for facilitating the transmitting the first signal between the first beamforming antenna and the second beamforming antenna is an uplink channel (see paragraph 67 lines 1-9); wherein a path for facilitating the transmitting of the second signal between the second beamforming antenna and the first beamforming antenna is a downlink channel (see paragraph 67 lines 1-9); and wherein the uplink and the downlink channel is a backhaul channel (see paragraph 33 lines 1-19). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify/implement the

Art Unit: 2616

transmission channels of Matthews into the combined wireless communication system of Adachi, in view of Ishikawa by programming the system to send in either direction with the antenna array. The motivation for doing so would be so that the separated channels could be configured to use different transmission powers depending on the distance of the base stations and to limit the amount of extra beacons if only one base station want to communicate.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Subbiah (6725038), Brenig (4718081), Trompower (6215982), Acompora (5487065) and Lee at al (6657981).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAWRENCE J. BURROWES whose telephone number is (571) 270-1419. The examiner can normally be reached on Monday - Thursday 8am - 2pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing F. Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LJB



WING CHAN
SUPERVISORY PATENT EXAMINER